

**Patent Application of****Cherng Chang****for**5 **Title: THREE DIMENSIONAL FRAMED DISPLAY AND FRAME CALENDAR****Claim Priority**

Provisional Patent Application No. 60/397,259, filed 2002 July 19,

Provisional Patent Application No. 60/398,857, filed 2002 July 26,

Provisional Patent Application No. 60/412,904, filed 2002 September 23,

10 Provisional Patent Application No. 60/444,463, filed 2003 February 3.

BACKGROUND OF THE INVENTION

This invention relates in general to picture frames, and more specifically, three dimensional framed display (3DFD) and 3D picture frame for making such 3D framed displays. Here the picture frame refers to a frame capable of displaying a picture sheet. The 3D picture frame refers to said picture frame capable of imparting a 3D effect to one or more displayed picture sheets and/or capable of displaying a 3D art. The 3D framed display refers to the display made possible with said 3D picture frame.

15 US Patent No. 6,293,038 discloses a novel 3D framed display. In this 3D framed display a 3D picture frame is employed which comprises a frame body typically formed by joining four frame moldings. In one embodiment a regular picture sheet is sandwiched between a curved transparent plate and a curved backing plate and bent into a concavo-convex shape for creating a

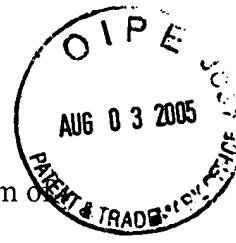


Fig. 25 is a perspective view, showing a second embodiment of the frame calendar system of the present invention.

Fig. 26 is a perspective view, showing a third embodiment of the frame calendar system of the present invention.

5 Fig. 27 is a perspective view, showing a fourth embodiment of the frame calendar system of the present invention.

Fig. 28 is an enlarged side view of a portion of the frame calendar system of Fig. 27, as viewed along the line 28-28 of Fig. 27, showing the details of a toggle stop.

10 Fig. 29 is a perspective view, showing the frame calendar system of Fig. 27 in which three U-shaped hanging hooks are replaced by a three ring binder.

Fig. 30 is a perspective view, showing a fifth embodiment of the frame calendar system of the present invention.

Fig. 31 is a perspective view, showing a sixth embodiment of the frame calendar system of the present invention.

15 Fig. 32 is an enlarged cross sectional view of a portion of the frame calendar system of Fig. 31, as viewed along the line 32-32 of Fig. 31, showing the details of a toggle clamp.

Figs. 33A and 33B are elevational views, showing a vertical blank note sheet and a horizontal blank note sheet, respectively.

20 Fig. 34 is a perspective view, showing the same sixth embodiment of the frame calendar system of the present invention shown in Fig. 31, and two additional calendar sheets and two non-calendar sheets.



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1962	spring leaf	1964	rabbit
1970	spring clamp or toggle clamp	1972	spring clamp or toggle clamp
1974	angle bracket	1976	toggle plate
1978	tension spring	1980	end hook
1982	end hook	1984	stud
1986	stud	1988	cylindrical rod
1990	cylindrical rod	1992	toggle plate dash outline

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Figs. 33A-33B	1472	horizontal blank note sheet (or non-calendar sheet)	
	1474	vertical blank note sheet (or non-calendar sheet)	
1478	boundary line	1480	boundary line
1482	dash line	1484	dash line
1486	rectangle dash lines	1488	rectangle dash lines

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Fig. 34	1910-1992	See Figs. 31-32
	1994	second horizontal calendar sheet
	1995	second vertical calendar sheet
	1996	first non-calendar sheet 1997 second non-calendar sheet



For the sake of completeness the animated 3D art 171 above described is also included in Fig. 9. This or any other animated 3D arts of similar insertion box design can all be installed in the present 3D picture frame 230 to add "live" to the 3D framed display. Change of the displayed 3D arts in this frame body 231 can be easily achieved without taking down the frame body 231 from the wall.

There are several advantages in the present 3D picture frame 230. The frame glass assembly 235 comprises two identical flexible frame glasses 293 which can be made by simple die cutting process. The thickness of each flexible frame glass is only about 0.03" (0.8 mm) or less which will achieve excellent light transmission efficiency.

For purpose of illustration several trademark figures are included in the present drawings. Figs. 2 and 9 show items 47 and 120 containing trademark figures by Disney™, and item 173 containing trademark figure by Barbie™.

Figs. 12-13

Figs. 12-13 show a third embodiment of the 3D picture frame of the present invention and a 3D framed display produced with this 3D picture frame. This 3D picture frame is an improvement over the prior art frame disclosed in the US Patent No. 6,293,038. Although this 3D picture frame lacks some features provided by the 3D picture frames 30 and 230 shown in Figs. 1-11, it is still capable of making most of the 3D framed displays of the present invention.

The 3D picture frame 2000 shown in Fig. 12 comprises a frame body 2002, a first flat transparent plate 2004, a second flat transparent plate 2006, a curved transparent plate 2008, a curved baking plate 2010, a top edge transparent plate 2012, a bottom edge transparent plate 2014, a magnetic plate 2016, and a backboard 2018.

The 3D framed display shown in Figs. 12-13 comprises the 3D picture frame 2000 and several contents to be displayed in the 3D picture frame 2000. These contents are a floating picture 2020, a background picture 2022, a top edge picture 2024, a bottom edge picture 2026, a first 3D art 2028 and a second 3D art 2030.

The frame body 2002 is typically formed by four frame moldings. A rabbet 2032 of the frame body 2002 is shown which defines a frame window 2034 through which all contents of the present framed display are displayed. A peripheral member 2036 is seen on the back side of the frame body 2002 on which a plurality of turn buttons 2038 are mounted for removably holding the backboard 2018.

There are two unique features in the frame body 2002. The first feature is that the depth of the frame body 2002, herein termed depth of the rabbet, is very deep compared with most

to its second position. On the other hand, the pressing force must be continuously applied to the clipboard clamp during the entire clamp opening process and beyond until all calendar sheets are removed or properly placed for mounting.

The fact that the toggle clamp can be left in its non-holding position indefinitely is also very beneficial. It will allow the user ample time to adjust or reposition the stack of calendar sheets until it is properly placed before the clamp is turned to its holding position. This advantage may make the present toggle clamp useful in a new kind of clipboard or bulletin board for holding any stack of sheets.

One other advantage of the toggle clamps 1970 and 1972 over the clipboard clamps 1860 and 1862 shown in Fig. 30 is that while only one toggle clamp is used at a time, the other toggle clamp not in use can be toggled to a position not interfering with the mounting of the calendar sheet. This means that the vertical calendar sheet 1924 and the horizontal calendar sheet 1922 are mounted on the same location on the back door 1940. The overall size of the back door 1940 can thus be made slightly smaller than that of the back door 1840 shown in Fig. 30.

The above described calendar sheet mounting can be done regardless whether the frame 1910 is face up laying on a table, hanging on a wall, or resting on its easel 1942. Once mounted, a calendar picture or photo is elegantly displayed through the window glass 1950 while the calendar sheet is exposed to facilitate memorandum writing and page flipping without opening the frame 1910. The horizontal photo 1952 and the horizontal calendar sheet 1922 are displayed uprightly and lined up vertically when the frame 1910 is placed in the vertical position. The vertical photo 1954 and the vertical calendar sheet 1924 are displayed uprightly and lined up horizontally when the frame 1910 is placed in the horizontal position.

Figs. 33A-33B

Figs. 33A and 33B show a vertical blank note sheet 1474 and a horizontal blank note sheet 1472, respectively, that can be mounted on and displayed in the frame calendar system of the present invention as shown in Figs. 22-24. Many blank note templates such as the one shown in Figs. 33A and 33B can be provided in the CD 1462. The user can simply choose one desired template and add the text "From the desk of Mary Smith" or other suitable text to make it a personal blank note sheet.

In Figs. 33A and 33B, the horizontal blank note sheet 1472 and the vertical blank note sheet 1474 have a boundary line 1478 and a boundary line 1480, respectively, with their sizes same as that of the boundary lines 1426 and 1452, respectively, as shown in Fig. 23. A paper cutter or